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36. The storage medium of claim 21, said network management process further comprising, in response to a quality of data transmitted to the client below a standard, the step of relocating the client.

37. The storage medium of claim 36, wherein the step of relocating the client in said network management process further includes the steps of:
identifying a parent of the client as a marked node; and
searching a new spot for the client, the new spot not being a child of the marked node.

38. The storage medium of claim 37, wherein the step of relocating the client in said network management process further includes the steps of:
in response a sibling of the client having a capacity for the client, connecting the client as a child of the sibling; and
in response to the sibling not having the capacity for the client, directing the client to the data stream source.

39. The storage medium of claim 38, wherein the step of relocating the client in said network management process further includes the step of recursively searching the new spot for the client in the hierarchy structure.

40. The process of claim 36, said network management process further comprising the step monitoring a jitter of a data stream transmitted to the client.

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41. A network data transmission system (100), comprising:
a content provider (101);
a plurality of clients seeking data from said content provider (101); and
a client connection manager (105), said client connection manager (105) arranging said plurality of clients in a hierarchy tree structure (102) having a first client (112) of said plurality of clients coupled to said content provider (101) as a node in a first tier of the hierarchy tree structure (102) and at least a portion of remaining clients of said plurality of clients as a descendent of the first client (112).

42. The network data transmission system (100) of claim 41, the first client (112) receiving data from said content provider (101) and relaying the data to the descendent thereof.

43. The network data transmission system (100) of claim 42, said plurality of clients further including a second client (122), the second client (122) being a child of the first client (112) in the hierarchy tree structure (102) and receiving the data from the first client (112).

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44. The network data transmission system (100) of claim 43, said plurality of clients further including a third client (132), the third client (132) being a child of the second client (122) in the hierarchy tree structure (102) and receiving the data from the second client (122).

45. The network data transmission system (100) of claim 43, said plurality of clients further including a third client (124), the third client (124) being a child of the first client (112) and a sibling of the second client (122) in the hierarchy tree structure (102) and receiving the data from the first client (112).

46. The network data transmission system (100) of claim 41, said plurality of clients further including a second client (116) coupled to said content provider (101) as a node in a first tier of a second hierarchy tree structure (106), the second client (116) receiving data from said content provider (101).

47. The network data transmission system (100) of claim 46, said plurality of clients further including a third client (126), the third client (126) being a child of the second client (116) in the second hierarchy tree structure (106) and receiving the data from the second client (116).

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48. The network data transmission system (100) of claim 47, said plurality of clients further including a fourth client (136), the fourth client (136) being a child of the third client (126) in the second hierarchy tree structure (106) and receiving the data from the third client (126).

49. The network data transmission system (100) of claim 47, said plurality of clients further including a fourth client (128), the fourth client (128) being a child of the second client (116) and a sibling of the third client (126) in the second hierarchy tree structure (106) and receiving the data from the second client (116).

50. The network data transmission system (100) of claim 41:
said client connection manager (105) arranging said plurality of clients into the hierarchy tree structure (102) in response to data transmission capacities of said content provider (101) and said plurality of clients; and
said client connection manager (105) dynamically adjusting the hierarchy tree structure (102) in response to a data transmission quality in the hierarchy tree structure (102).

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51. A method for communicating between a first site behind a first firewall and a second site behind a second firewall, comprising:
informing the second site about a port on the first firewall;
transmitting a first data packet addressed to the port on the first firewall from the second site through a port on the second firewall;
relaying the first data packet to the first site in response to the first firewall being promiscuous;
transmitting a second data packet addressed to the port on the second firewall from the first site through the port on the first firewall; and
relaying the second data packet to the second site.

52. The method of claim 51, wherein informing the second site about a port on the first firewall further includes:
establishing a first link between the first site and an external site through the port on the first firewall;
establishing a second link between the second site and the external site through the second firewall; and
transmitting a message from the external source to the second site identifying the port on the first firewall.

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53. The method of claim 52, wherein establishing a first link between the first site and an external site through the port on the first firewall and establishing a second link between the second site and the external site through the second firewall further include:

transmitting a first initializing data packet from the first site to the external site through the port on the first firewall; and

transmitting a second initializing data packet from the second site to the external site through the second firewall.

54. The method of claim 51, further comprising identifying the first firewall as promiscuous.

55. The method of claim 54, wherein identifying the first firewall includes:

transmitting an outgoing data packet from the first site to the external site through the port on the first firewall;

informing a second external site about the port on the first firewall, the second external site having a different network address from the first external site;

transmitting an incoming data packet addressed to the port on the first firewall from the second external site; and

identifying the first firewall as being promiscuous in response to the first site receiving the incoming data packet.

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56. A method for communicating between a first site behind a first firewall and a second site behind a second firewall, comprising:
informing the first site about the second firewall;
informing the second site about a port on the first firewall;
transmitting a first data packet addressed to the second firewall through the port on the first firewall;
transmitting a second data packet addressed to the port on the first firewall from the second site through a port on the second firewall;
relaying the second data packet to the first site in response to the first firewall being non-strict;
transmitting a third data packet addressed to the port on the second firewall from the first site through the port on the first firewall; and
relaying the third data packet to the second site.

57. The method of claim 56, wherein informing the first site about the second firewall and informing the second site about a port on the first firewall further include:
establishing a first link between the first site and an external site through the port on the first firewall and a second link between the second site and the external site through the second firewall;
transmitting a first message from the external source to the first site identifying the second firewall; and
transmitting a second message from the external source to the second site identifying the port on the first firewall.

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58. The method of claim 57, wherein establishing a first link between the first site and an external site through the port on the first firewall and a second link between the second site and the external site through the second firewall further includes:

transmitting a first initializing data packet from the first site to the external site through the port on the first firewall; and

transmitting a second initializing data packet from the second site to the external site through the second firewall.

59. The method of claim 56, further comprising identifying the first firewall as non-strict.

60. The method of claim 59, wherein identifying the first firewall includes:

transmitting an outgoing data packet from the first site to a first port of the external site through the port on the first firewall;

transmitting an incoming data packet addressed to the port on the first firewall from a second port on the external source, the second port being different from the first port; and

identifying the first firewall as being non-strict in response to the first site receiving the incoming data packet.

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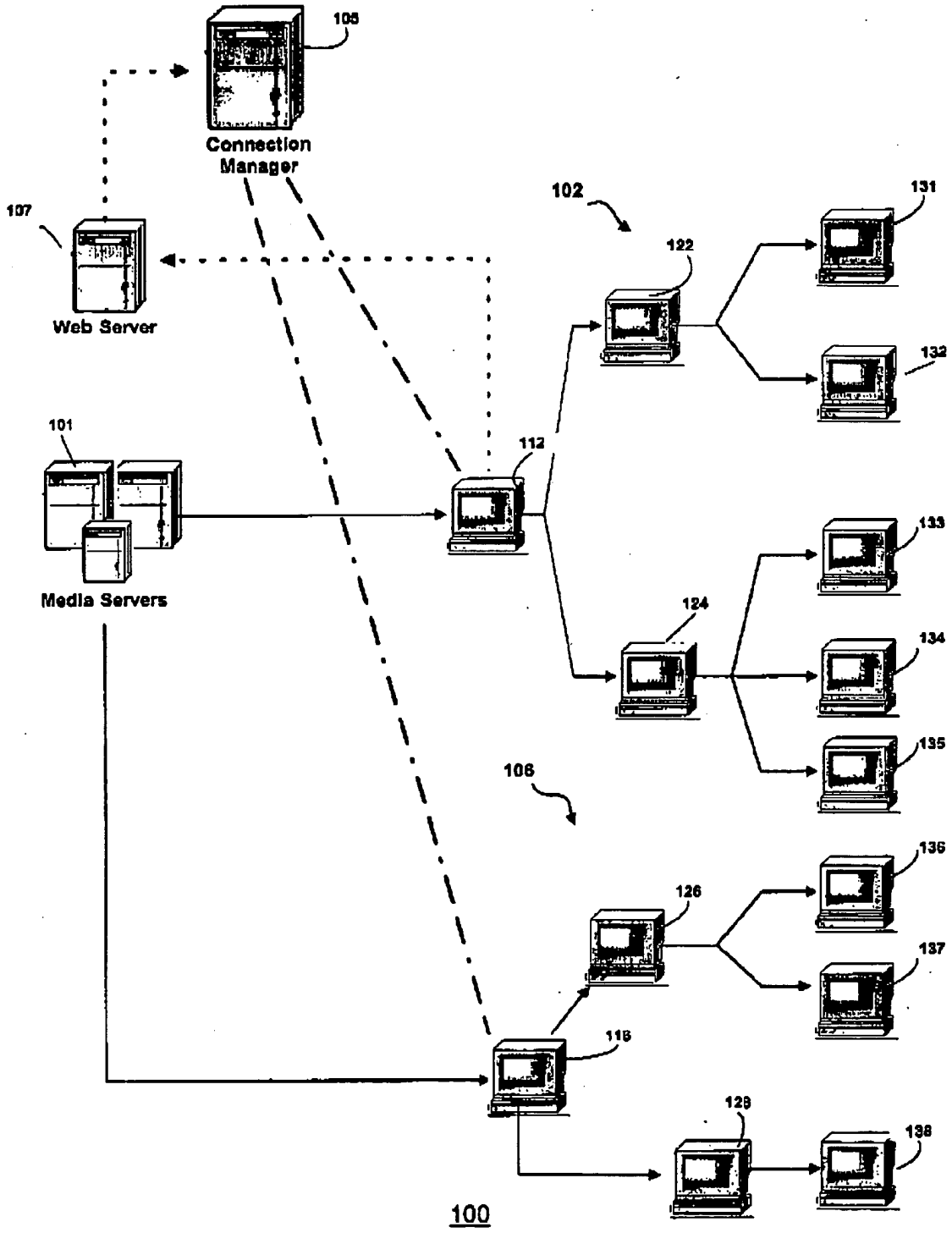
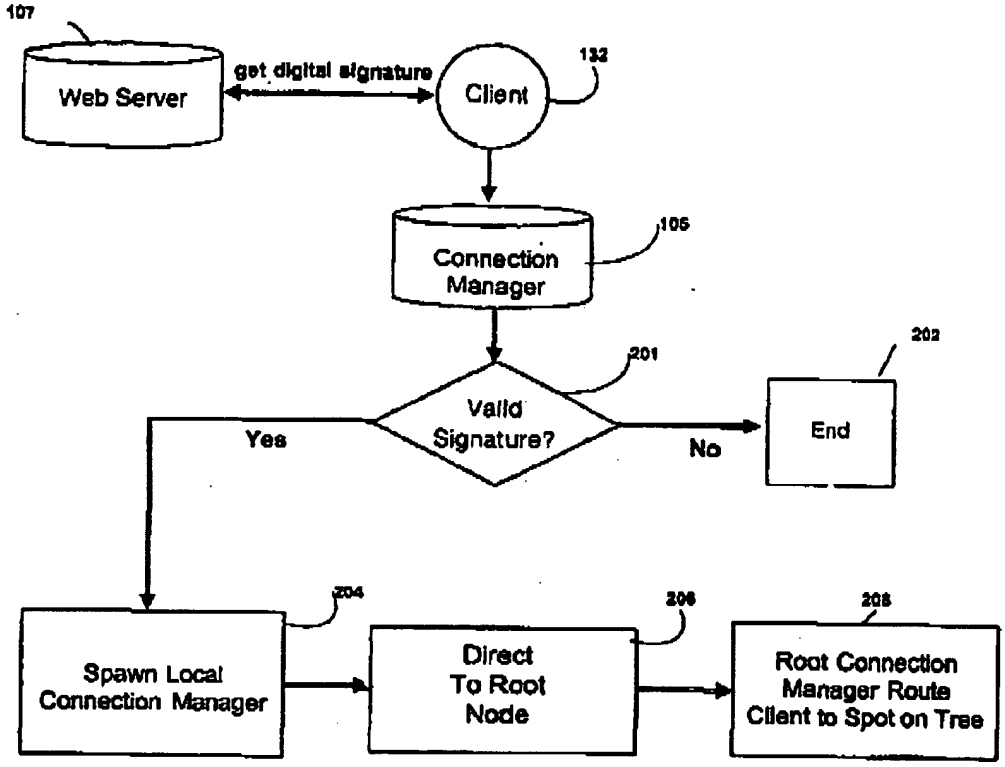

105
Connection Manager
107
Web Server
101
Media Servers
102
112
122
131
132
124
133
134
135
106
126
136
137
116
128
138
100

FIG. 1



200

FIG. 2

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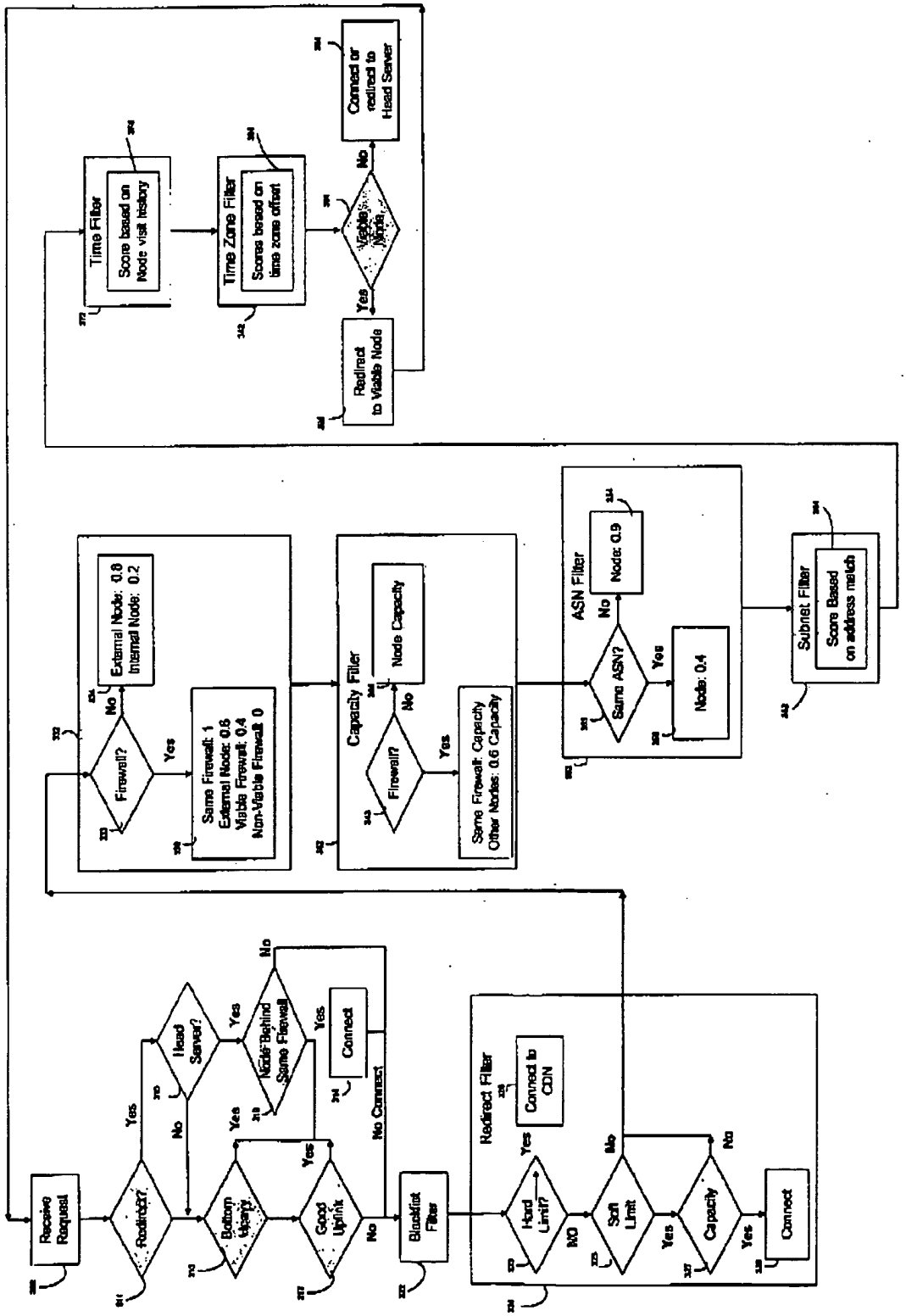
Receive Request
Redirect?
Head Server?
Node Behind Same Firewall
Connect
Bottom Heavy
Good Uplink
Blacklist Filter
Redirect Filter
Connect to CDN
Hard Limit?
Soft Limit
Capacity
Connect
Time Filter
Score based on Node visit history
Time Zone Filter
Scores based on time zone offset
Viable Node
Connect or redirect to Head Server
Redirect to Viable Node
Firewall?
External Node: 0.8
Internal Node: 0.2
Same Firewall: 1
External Node: 0.8
Viable Firewall: 0.4
Non-Viable Firewall: 0
Capacity Filter
Node Capacity
Firewall?
Same Firewall: Capacity
Other Nodes: 0.6 Capacity
ASN Filter
Node: 0.9
Same ASN?
Node: 0.4
Subnet Filter
Score Based on address match
300

FIG. 3

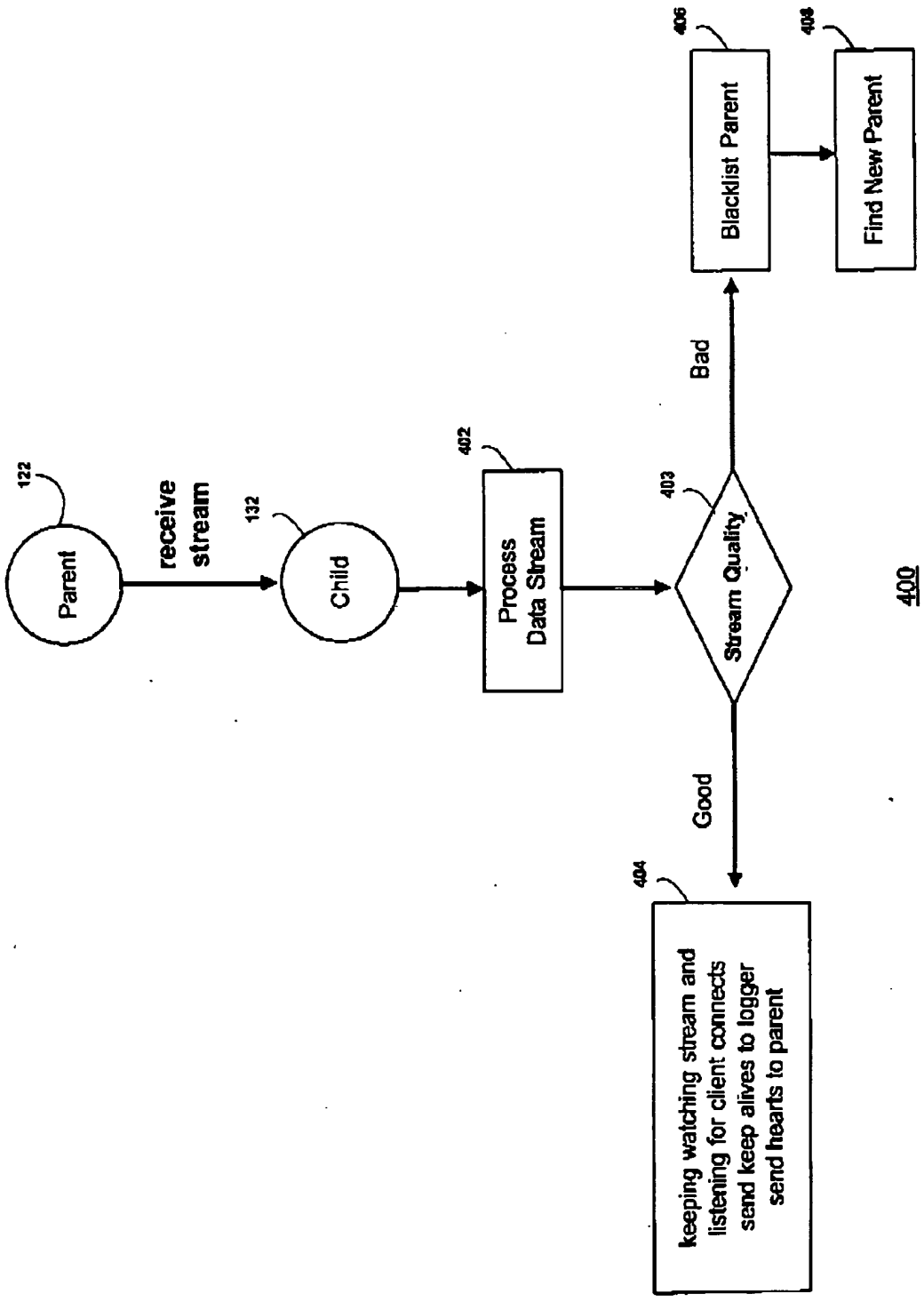
406
408
Blacklist Parent
Find New Parent
Bad
402
403
122
receive stream
132
Parent
Child
Process Data Stream
Stream Quality
400
Good
404
keeping watching stream and listening for client connects send keep alives to logger send hearts to parent

FIG. 4

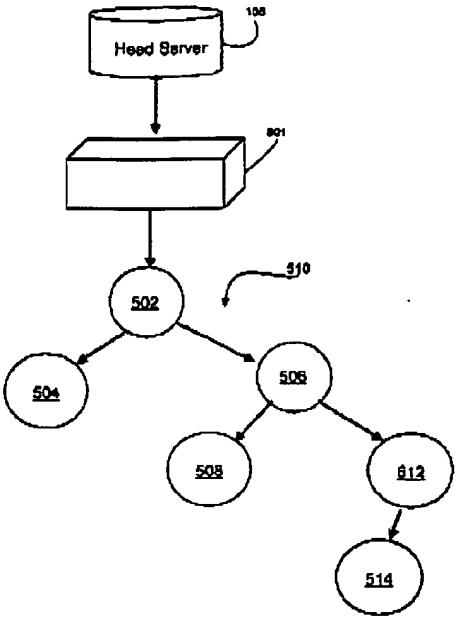

FIG. 5A

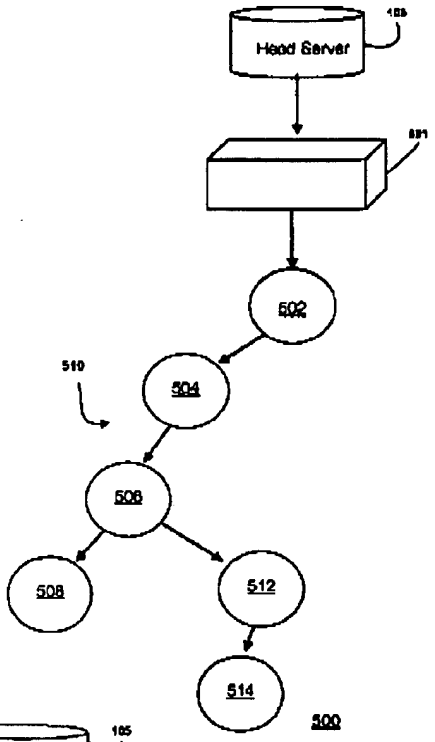

FIG. 5B

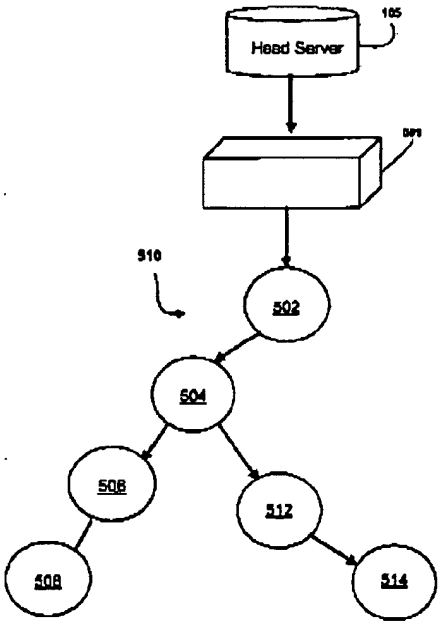

FIG. 5C

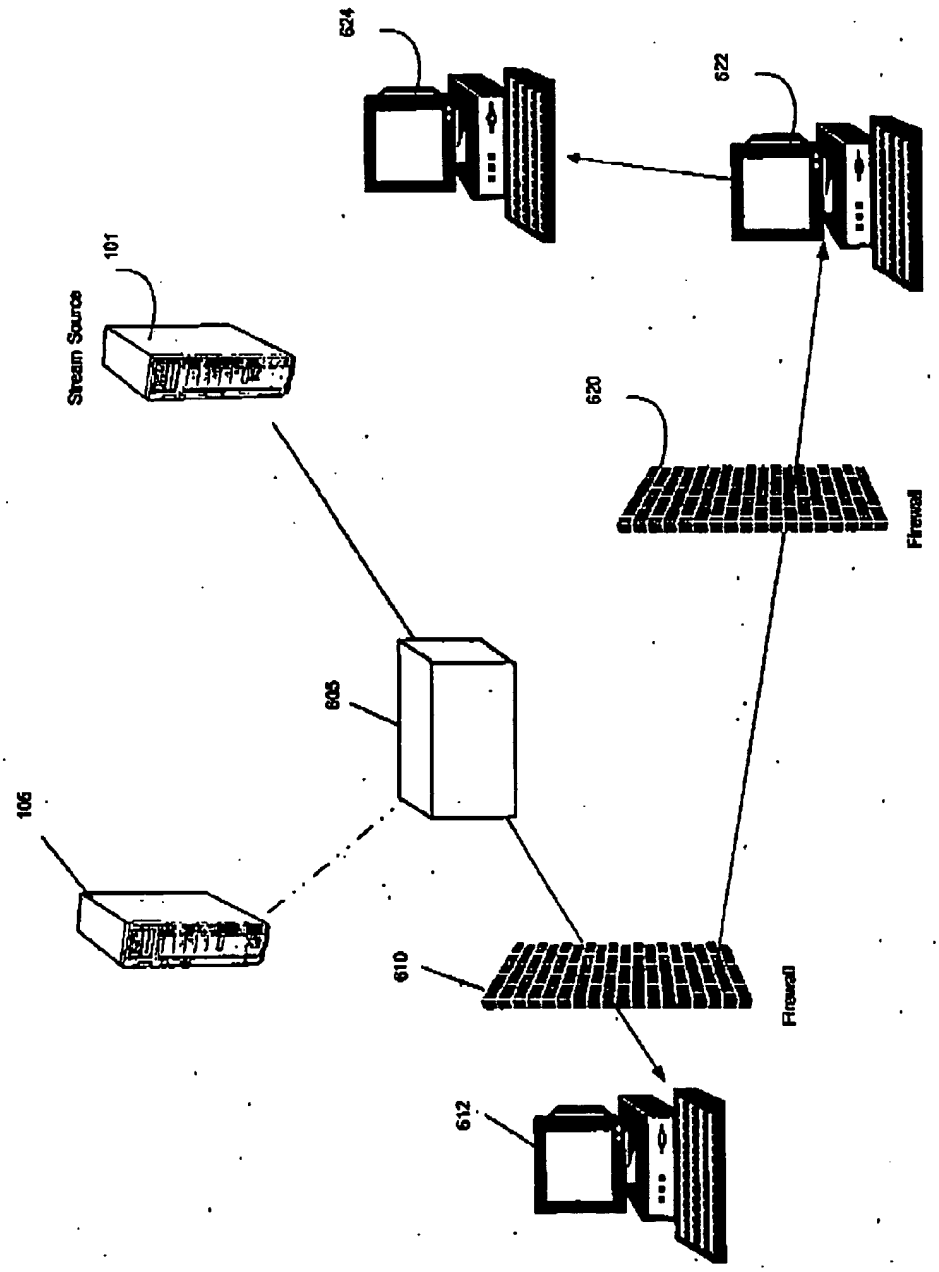

Fig. 6

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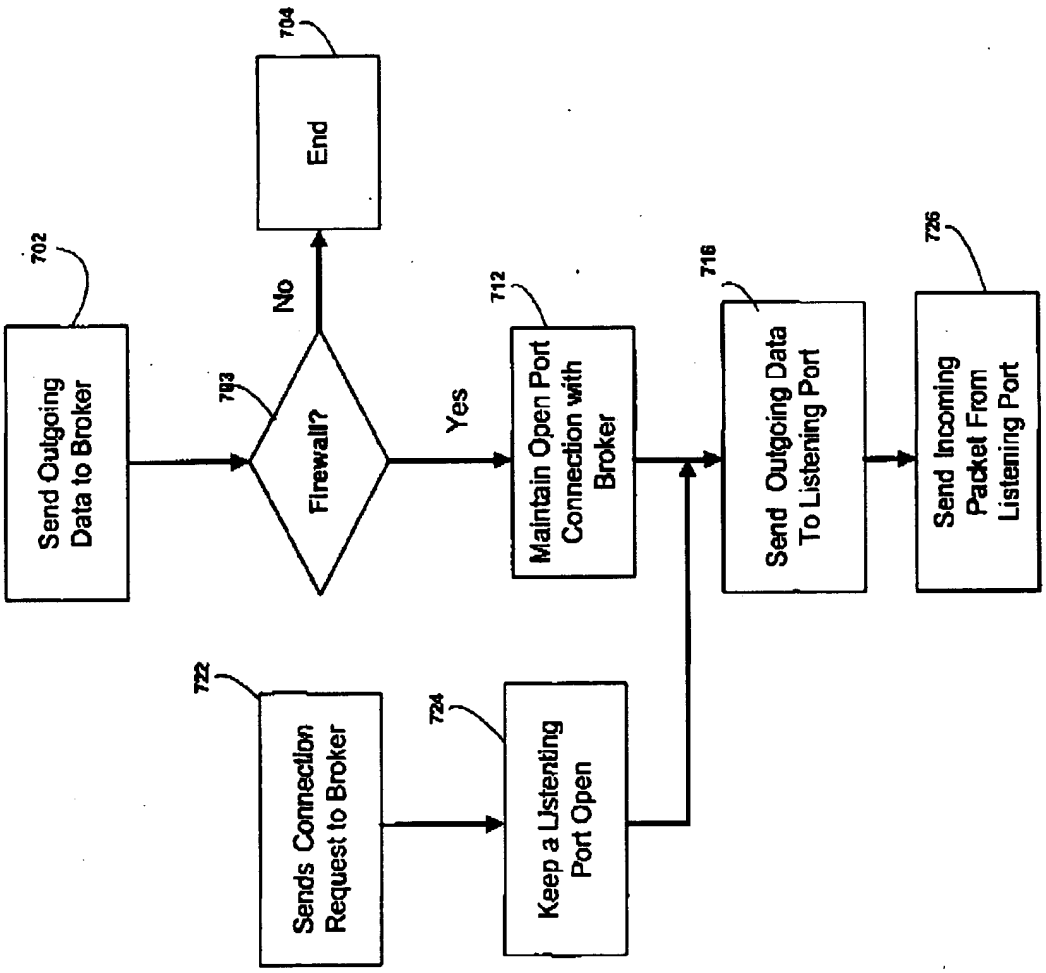

Send Outgoing Data to Broker
702
Firewall?
703
No
End
704
Yes
Maintain Open Port Connection with Broker
712
Send Outgoing Data To Listening Port
716
Send Incoming Packet From Listening Port
726
Sends Connection Request to Broker
722
Keep a Listening Port Open
724

700

FIG. 7

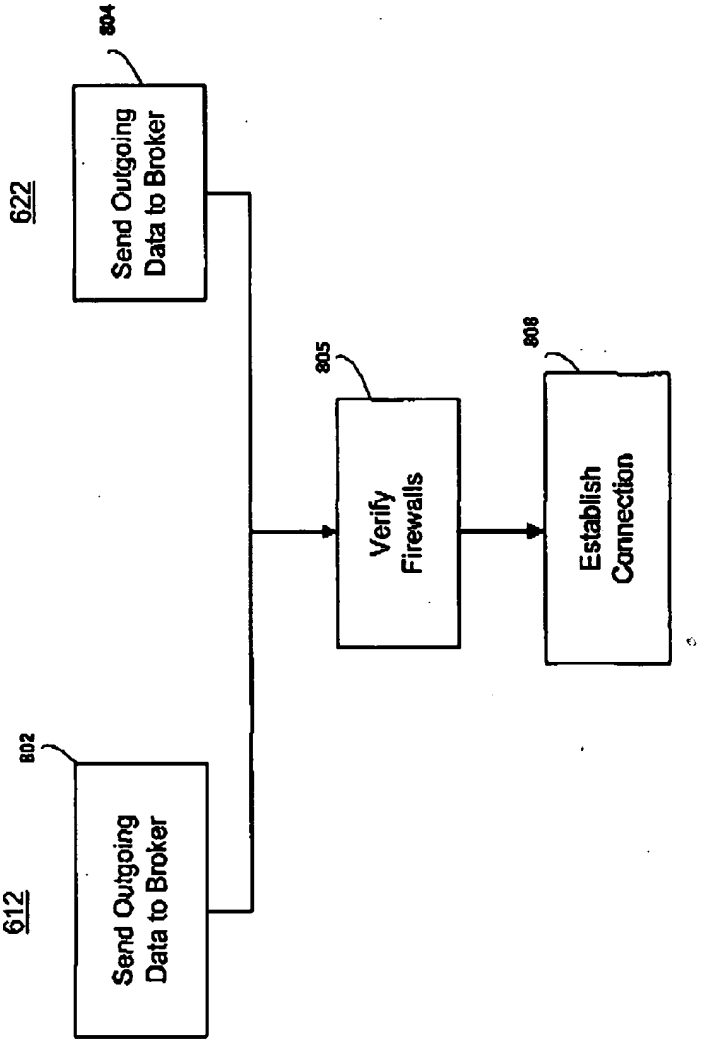

804
Send Outgoing Data to Broker
622
805
Verify Firewalls
808
Establish Connection
800
802
Send Outgoing Data to Broker
612

FIG. 8A

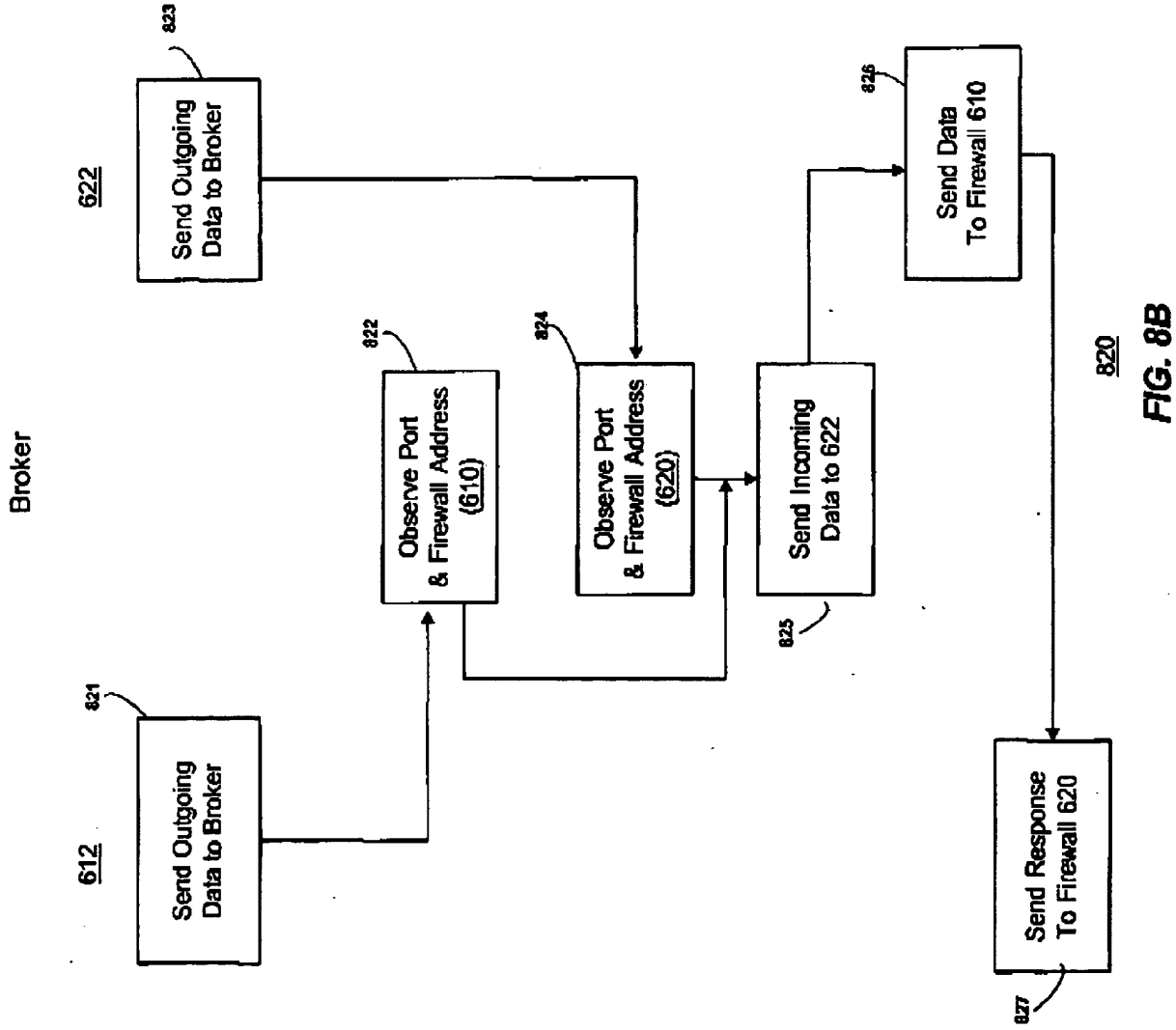

Broker
820
612
622
Send Outgoing Data to Broker
Send Outgoing Data to Broker
Observe Port & Firewall Address (610)
Observe Port & Firewall Address (620)
Send Incoming Data to 622
Send Data To Firewall 610
Send Response To Firewall 620
821
822
823
824
825
826
827

FIG. 8B

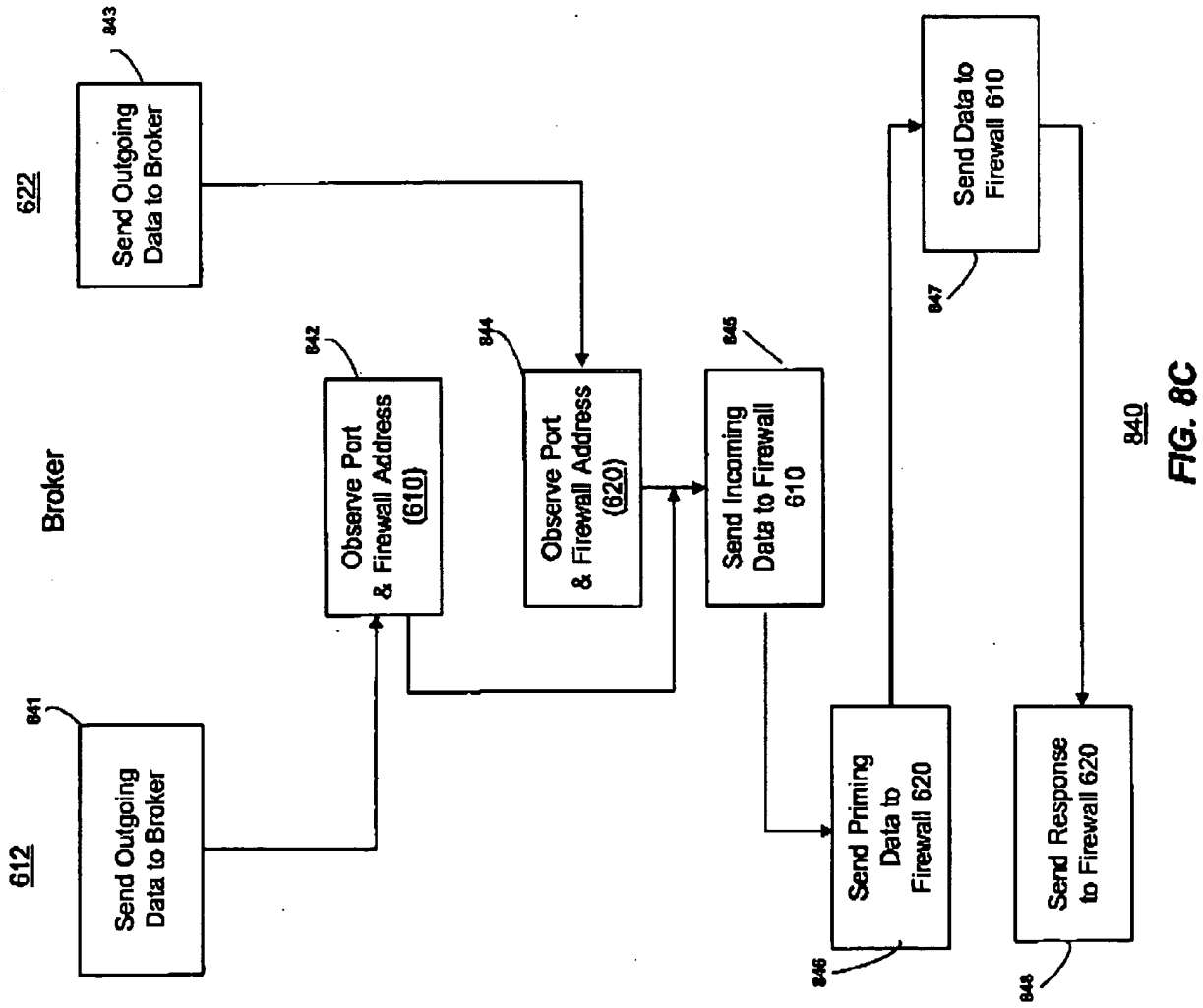
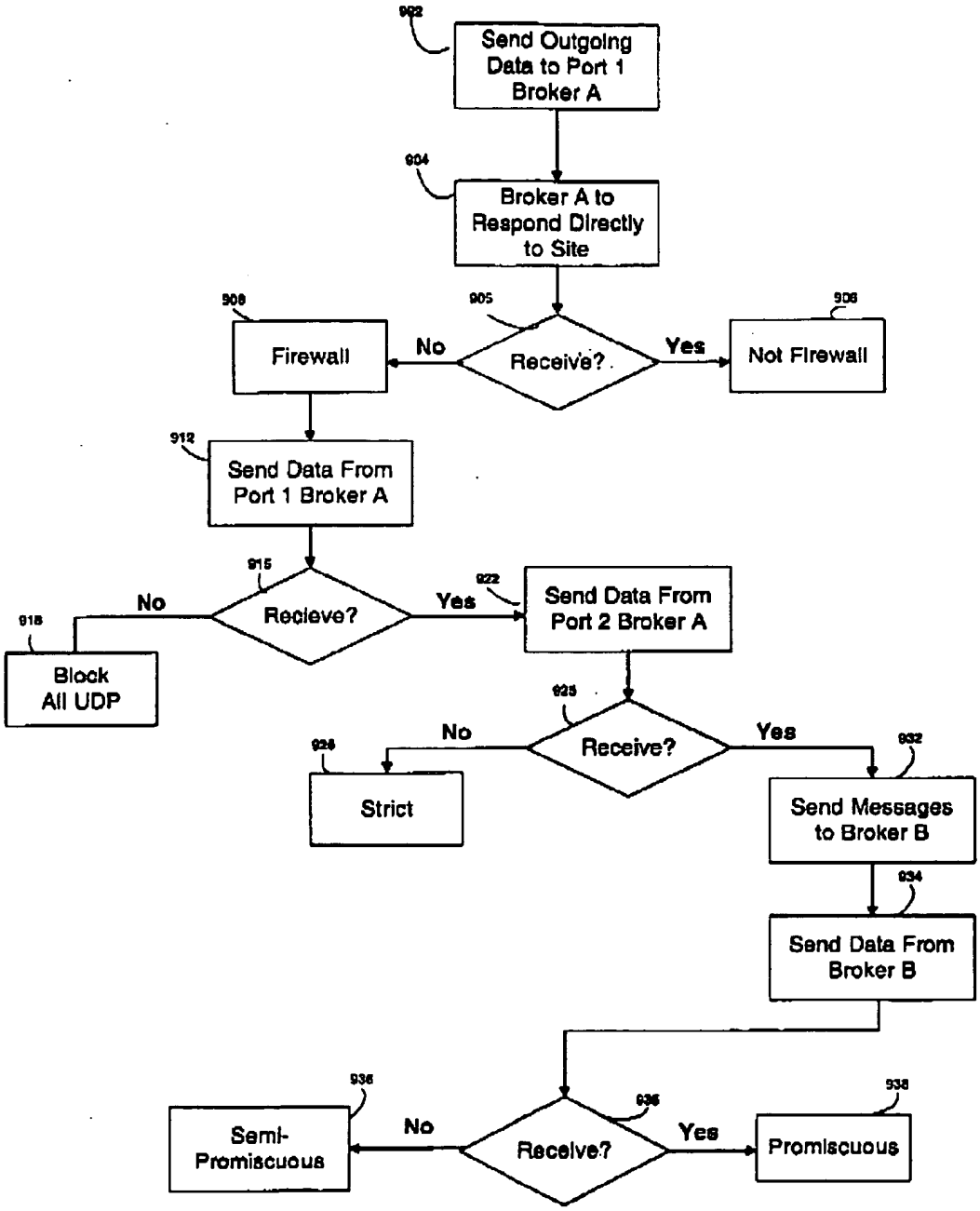

612
Send Outgoing Data to Broker
841
Broker
Observe Port & Firewall Address (610)
842
622
Send Outgoing Data to Broker
843
Observe Port & Firewall Address (620)
844
Send Incoming Data to Firewall 610
845
Send Priming Data to Firewall 620
846
Send Data to Firewall 610
847
Send Response to Firewall 620
848
840

FIG. 8C


902
Send Outgoing Data to Port 1 Broker A
904
Broker A to Respond Directly to Site
905
Receive?
No
Yes
908
Firewall
906
Not Firewall
912
Send Data From Port 1 Broker A
915
Recieve?
No
Yes
918
Block All UDP
922
Send Data From Port 2 Broker A
925
Receive?
No
Yes
926
Strict
932
Send Messages to Broker B
934
Send Data From Broker B
936
Semi-Promiscuous
No
935
Receive?
Yes
938
Promiscuous

900

FIG. 9

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